

# **Virginia's Residential Retrofit Project**

## **Final Technical Report**

### **Department of Energy Award Number:**

DE-EE0004442

### **Better Buildings Neighborhood Program Name:**

Virginia - SEP

### **Project Title:**

A Multi-State Model for Catalyzing the National Home Energy Retrofit Market

### **Name of Project Director/Principal Investigator:**

Ron Hachey/Al Christopher, Virginia Department of Mines, Minerals and Energy

### **Team Members:**

Virginia Department of Mines, Minerals and Energy (DMME)

Southeast Energy Efficiency Alliance (SEEA)

Earth Advantage Institute (EAI)

National Association of State Energy Offices (NASEO)

Local Energy Alliance Program (LEAP) - Charlottesville and Northern Virginia

Richmond Region Energy Alliance (RREA)

Community Alliance for Energy Efficiency (cafe<sup>2</sup>)

U.S. Department of Energy (DOE)

The information contained in this report may be shared and used by the general public without the need for any further consent from either the DMME or the DOE.

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

July 2014

## TABLE OF CONTENTS

Executive Summary.....	3
Final Technical Report.....	6
Institutional Design and Business Model.....	6
Program Design and Customer Experience .....	7
Driving Demand .....	8
Workforce Development .....	10
Financing and incentives.....	11
Data and Evaluation.....	12
Accomplishments.....	14
Challenges.....	22
Start-up Delays.....	22
Contractors .....	22
Client and Project Management.....	23
Marketing.....	23
Partnerships and Collaborations.....	24
Market Knowledge and Demand .....	24
Program Goals and Requirements.....	24
Program Sustainability Plans.....	26
Verification of Data.....	27
Developed Products.....	28
Addendum .....	28
Appendices.....	29
CAFE <sup>2</sup> Accomplishments .....	29
LEAP Charlottesville and NOVA Accomplishments .....	30
Richmond Accomplishments.....	31

## Executive Summary

In the fall of 2010, the Virginia Department of Mines, Minerals and Energy (DMME) launched the *Multi-State Model for Catalyzing the National Home Energy Retrofit Market Project* (Multi-State Project). This residential energy efficiency pilot program was a collaborative effort among the states of Alabama, Massachusetts, Virginia, and Washington and was funded by the award of a competitive State Energy Program (SEP) grant through the U.S. Department of Energy (DOE).

The objective of this project was to catalyze the home energy retrofit market in select target markets within the Commonwealth of Virginia. To achieve this goal, the project addressed a variety of marketplace elements that did not exist, or were underdeveloped, at the outset of the project. These included establishing minimum standards and credentials for marketplace suppliers, educating and engaging homeowners on the benefits of energy efficiency and addressing real or perceived financial barriers to investments in whole-home energy efficiency improvements, among others. The anticipated affect of the activities would be increased market demand for retrofits, improved audit to retrofit conversion rates and growth in overall community understanding of energy efficiency.

The four-state collaborative was created with the intent of hastening market transformation by allowing each state to learn from their peers, each of whom possessed different starting points, resources, and strategies for achieving the overall objective. The four partner states engaged the National Association of State Energy Officials (NASEO) to oversee a project steering committee and to manage the project process evaluation for all four states. The steering committee, comprised of key program partners, met on a regular basis to provide overall project coordination, guidance, and progress assessment. While there were variances in program design among the states, there were several common elements including:

1. use of the Energy Performance Score (EPS) platform - an audit and home energy rating tool,
2. emphasis on community based partnerships,
3. marketing and outreach to increase homeowner participation,
4. training for “market actors” – building auditors and contractors, real estate agents and appraisers,
5. access to financing options including rebates, incentives, and loan products, and
6. an in-depth process evaluation to support continual program improvement and analysis.

In Virginia, three nonprofit Regional Energy Alliances (REAs) were selected to design and implement programs for this pilot project. The Local Energy Alliance Program (LEAP) operated programs in Charlottesville and Arlington County (Northern Virginia or NOVA), the Community Alliance for Energy Efficiency (cafe<sup>2</sup>) operated programs in Roanoke and Blacksburg (Southwest Virginia) and the Richmond Regional Energy Alliance (RREA) operated a program in Richmond. Each REA structured its program to address the unique local conditions and populations in its community.

The Virginia Department of Mines, Minerals and Energy (DMME) and the Southeast Energy Efficiency Alliance (SEEA) provided overall project management services and provided common resources to the

REAs including contracted services for contractor training, quality assurance testing, data collection and reporting services.

The fundamental **program components** included:

1. attracting homeowners with audit rebates and retrofit incentives,
2. engaging and educating homeowners with online assessment tools and Energy Performance Score (EPS),
3. training auditors, contractors, and real estate professionals;
4. developing networks of qualified contractors to perform building assessments and retrofit work,
5. developing financing mechanism from local credit unions and lenders.

The design of each program focused on addressing several **known barriers** including:

1. limited homeowner knowledge on the benefits of energy efficiency,
2. lack of financing options,
3. lack of community support for energy efficiency programs, and
4. lack of trained market actors including contractors and real-estate professionals.

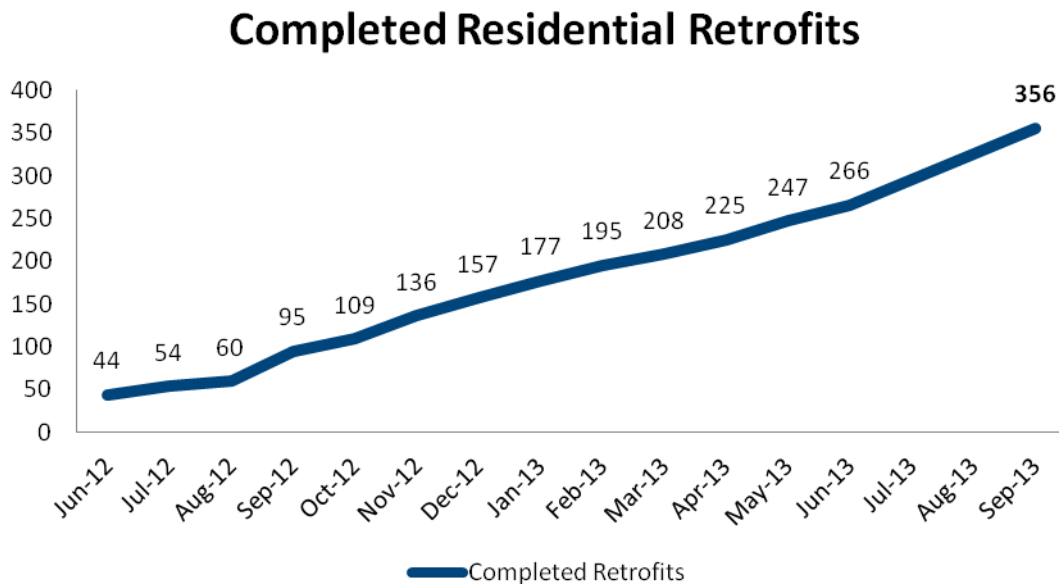
The programs were able to make progress on addressing all of these barriers and were most successful in offering financing options and training market actors. The most challenging barriers proved to be the act of building a market for energy efficiency where none previously existed, convincing homeowners of the value in investing in energy efficiency (and therefore completing retrofits), engaging electric and natural gas utilities to partner on delivery of collaborative energy efficiency programs and/or incentives and achieving the statewide total project target of 1,350 completed retrofits.

The program components that proved to be the most valuable to program success were engaged contractor networks that promoted and endorsed the program and their access to rebates, incentives and financing mechanisms for their prospective customers. While the other components were helpful, the REAs expressed that more time is needed to adjust and test these components in order for them to be successful.

Throughout this three-year program 1,259 building audits and 356 building retrofits were completed making homes in Virginia more comfortable, less expensive to operate, more valuable in the marketplace, and safer and healthier for families to be living in. Continuing on this momentum, the REAs plan to form a statewide alliance and will continue to provide energy services and education to communities in Virginia.

Listed below are the final audit and retrofit numbers for each Virginia program.

Programs	Cumulative Total Completed Retrofits	Cumulative Total Completed Audits	Audit to Retrofit Conversion Rate
LEAP - Charlottesville	88	345	25%
LEAP - NOVA	81	374	22%
RREA	101	320	32%
cafe <sup>2</sup>	86	220	39%
<b>Virginia Total</b>	<b>356</b>	<b>1,259</b>	<b>28%</b>



# Final Technical Report

## Institutional Design

The four State Energy Offices collaborated with the NASEO and other partners, including the Earth Advantage Institute and the Washington State University Energy Extension Program, to establish the overarching project concept. The stakeholders identified several key hypotheses that formed the basis of the project design. They included:

- Targeted communities did not have a history of energy efficiency program offerings - such as those provided elsewhere by utilities.
- Homeowners lacked awareness of the benefits of energy efficiency as well as knowledge about how to reduce their home's energy consumption.
- Homeowners lacked the tools to address real and perceived financial barriers to increased investment in energy efficiency measures.
- Target markets lacked trained, qualified and well-informed energy efficiency providers (i.e. contractors)

In response to these key challenges, the collaborative proposed the following shared solutions to achieve the goals of creating residential energy efficiency markets:

- Local program implementation and marketplace coordination.
- Locally-tailored and delivered homeowner engagement strategies.
- Deployment of a nationally available home energy rating and labeling tool.
- Workforce development and training of energy efficiency solution providers and allies.
- Financial incentives and tools to address the expense of investing in whole home energy retrofits.
- Measurement and evaluation of the project's impact using a variety of performance metrics.

## Business Model

Each of the three REAs in Virginia included these elements in their program design. While there were many common features among the Regional Energy Alliances (REAs) in Virginia, each was structured to fit the needs of its community and the implementing organization. Two of the three local implementers, cafe<sup>2</sup> and RREA, were created in response to the SEP grant. The third, LEAP, had formed only two years earlier.

The cafe<sup>2</sup> program, serving Blacksburg and Roanoke, was formed as a subsidiary of Community Housing Partners. cafe<sup>2</sup>'s association with Community Housing Partners, a reputable and well established organization, proved to be invaluable to cafe<sup>2</sup>'s startup process. Community Housing Partners was able to provide BPI training to cafe<sup>2</sup> staff and helped to develop an effective Quality Assurance Plan – including a sound framework of procedures and protocols for the contractor network to follow.

Programs that are just being launched in certain localities would benefit from establishing a relationship with an existing organization that can provide them with the resources that are necessary for success. cafe<sup>2</sup>'s business model was similar to that of a trade group by providing overall program marketing and outreach, consumer education and a set of quality and certification standards for contractors and their work.

The Local Energy Alliance Program (LEAP), serving Charlottesville and Arlington County, was established in 2009 as a nonprofit energy-services organization promoting energy conservation and efficiency in central Virginia under the U.S. Department of Energy's Home Performance with ENERGY STAR program with plans to eventually expand to support statewide residential and commercial energy efficiency programs. LEAP's operations are funded through grants, donations, corporate sponsorship, and program income tied to LEAP's organizational mission.

LEAP's business model to generate program income includes:

- charging fees for membership, services, leads and advertising;
- charging a percent of sales fee for aggregate purchasing of goods and services; and
- monetizing efficiency gains in the voluntary carbon markets.

Importantly, each revenue stream is linked to a particular step in the energy efficiency retrofit transaction and income generated is proportional to the value provided by LEAP in that process.

The Richmond Regional Energy Alliance (RREA) was also established as a result of the Multi-State Project grant. Similar to cafe<sup>2</sup>, RREA placed an emphasis on homeowner engagement and marketplace organization, pursuing a variety of marketing and outreach strategies as well as ensuring that its community was served by a well-trained contractor base. However, RREA did not have access to the technical expertise and support services that cafe<sup>2</sup> enjoyed as a result of its association with Community Housing Partners and relied the most on external technical support to implement its program. RREA leveraged its proximity to allied organizations to develop a variety of outreach strategies that included faith-based groups, academic institutions and the municipal gas utility.

## **Program Design and Customer Experience**

The Virginia programs all shared a similar model in that the programs themselves served as an intermediary between the homeowner and the contractor. Some programs tested models where the program was more active in the transaction process while others tried a more hands-off approach.

cafe<sup>2</sup> aimed to serve as an advocate for each homeowner by providing free in-home consultations and walking them through the process of home energy audit, proposal from the contractor and the retrofit work. While the model worked well, cafe<sup>2</sup> staff felt that a client management system would have helped a great deal to understand where clients were in the process and more clearly define who was responsible for a particular task. In terms of customer experience, cafe<sup>2</sup> discovered that many clients did not see the value in paying for an audit separate from the retrofit and this may ultimately have contributed to a low conversion rate. cafe<sup>2</sup> plans to test a more prescriptive model in the future that will

use data from comparable homes and key inputs about the home to develop a proposal after a contract is signed so that the key audit functions are rolled into the cost of the retrofit. cafe<sup>2</sup> also found that clients generally did not understand the scale of the Energy Performance Score (EPS) and the post-retrofit EPS report carried very little value as it is not commonly recognized by the real estate market. In hindsight, cafe<sup>2</sup> staff believes that becoming a sponsor of the HPwES Program would have been more effective in providing homeowners with a certificate and a meaningful record of their upgrades. They have since pursued this option and now are participating as part of a state-wide program that is utilizing the HPwES Model.

In Charlottesville and NOVA, LEAP designed their programs to easily meet the requirements of the SEP award while addressing the needs of the homeowner. LEAP required a network of pre-approved contractors to use the EPS tool to generate home energy audit scores. LEAP worked closely with their network of contractors, realtors, and appraisers to offer trainings and certifications to educate and transform their energy efficiency markets. LEAP also required that the installed measures achieve at least a 20% gain in efficiency in order to comply with the grant requirements and for the homeowners to qualify for incentives. Once the project was complete, LEAP staff performed quality assurance checks on the retrofit work. Customers who chose to do whole-house retrofits received close personal attention throughout the process and this proved to be the most effective method for increasing conversion rates and creating a positive impression of the program. LEAP also found that their past clients to be strong proponents of the program, which they used in their marketing efforts.

The Richmond Regional Energy Alliance (RREA) designed their program to have minimal intervention from the program between the contractor and the homeowner. In the beginning of the project, RREA did not engage with the homeowner until after they had requested an energy audit. Because of this approach, there may have been some homeowners who did not follow through with a retrofit after the audit was completed. Towards the end of the project period, RREA changed the program design to be more inclusive in the process. Based on the experiences of peer programs, RREA provided homeowners with an Energy Coach to walk them through the process. The Energy Coach served to guide, advise and answer any questions that homeowners had about their home audits or recommended retrofit measures.

According to the results of the process evaluation report undertaken for the Multi-State Project by The Cadmus Group, the majority of the partial participants and the full participants were satisfied with the services that they received from the REA programs. Partial participants were those homeowners who received a home energy audit, but did not make energy efficiency improvements to their homes. The full participants were those homeowners who completed a home audit and then went on to complete some or all of the recommended energy efficiency improvements to their homes.

## **Driving Demand**

Throughout the project period, the REA Program Administrators discovered that there were several types of clients that were more likely to make energy efficiency improvements to their homes and that they do so for a variety of reasons. The clients that fell into this motivated group included:

1. people who valued energy efficiency and had the income to perform the work, but had never had a home energy audit performed;
2. people who experienced repeat exposure or word-of-mouth experiences from friends, neighbors, and contractors about the program;
3. homeowners who planned on making repairs or upgrades anyways, but wanted to take advantage of current financial incentives; and
4. low-to-moderate income individuals who wanted to utilize the financial incentives and loans along with other financial assistance programs in order to improve their homes and lower their energy bills.

The programs employed a wide variety of marketing, outreach, and educational activities all with the aim of increasing demand for whole-house energy efficiency retrofits.

cafe<sup>2</sup> implemented a three-pronged marketing strategy. The first strategy was Coffee and Conversation events where program staff discussed energy efficiency and the benefits of the program. These events were advertised through social media, local civic groups, flyers, radio ads, and newspaper ads. The attendance at these events was good, but ultimately few attendees went forward with audits and even fewer completed home retrofit projects.

The second strategy was to establish a strong presence at local events, such as neighborhood meetings, home shows, farmer's markets, and street festivals. cafe<sup>2</sup> staff found that this method earned the highest return on investment, as they were able to engage new clients in conversation and sign them up for in-home energy consultations. This strategy also helped to improve cafe<sup>2</sup>'s brand awareness and provided a degree of legitimacy by being seen amongst other respectable businesses and organizations in their community.

The third strategy involved placing large yard signs in front of homes that had completed retrofits. This strategy also paid off significantly and generated a substantial number of leads. cafe<sup>2</sup> found that the strategies mentioned above were the most successful in terms of driving demand.

cafe<sup>2</sup> also tried a variety of other marketing activities including generation of media coverage, billboard and bus ads, radio advertising, neighborhood canvassing and direct mailers. The staff found it difficult to say whether these conventional marketing strategies were effective, but speculated that the indirect affect of repeated exposure may have been beneficial to their program.

LEAP also undertook a variety of marketing strategies to drive demand and found the most success with their Home Energy Makeover Contests. In both Charlottesville and NOVA, the contests introduced thousands of homeowners to LEAP and the concept of home energy performance. LEAP's other successful marketing effort was a bill stuffer that went out to all Arlington County homeowners in the spring of 2012. This bill stuffer offered a \$250 rebate on an energy audit that over 250 residents utilized. LEAP believes this promotion was especially effective because it came directly from the County and included a letter of support/endorsement from the County staff. LEAP also participated in workshops, hosted presentations, sent regular e-mail newsletters, participated in many community events and had a recurring radio program. In Charlottesville, LEAP has become a reputable and well-known organization

and their brand is becoming more well known in Arlington as they engage elected officials, county staff and other nonprofits to promote their program.

LEAP is unique among the Virginia REAs for most dramatically modifying the retrofit process to respond to feedback it received from homeowners. Recognizing that many homeowners found a several thousand dollar investment challenging, LEAP began experimenting with a “staged retrofit” process during which homeowners implement efficiency projects over a period of time and receive a certificate when they achieve a total of 20% in energy savings. Despite LEAP’s increased community recognition, they still find that there is a knowledge gap across the market with many homeowners not understanding how their home works as a system and the benefits of energy efficiency home performance improvements.

RREA found that it takes several years to build and establish a program’s name and credibility in a community. Like LEAP, RREA found that the Home Energy Makeover Contest was a very effective method to engage a large number of homeowners at once. RREA noted that the free (to homeowners) online EnergySavvy home energy evaluation tool was a critical component to engage homeowners to enter into the Home Energy Makeover Contest. The earned television spots on the local news to showcase the before and after conditions in the contest-winning home was also helpful to introduce homeowners to the benefits of the program. RREA also had a great deal of success in engaging with neighborhood associations, faith-based institutions and realtors to promote the program. In fact, RREA’s faith-based outreach initiatives inspired other programs to adopt the same model.

## **Workforce Development**

In order to address a major hypothesis driving this project – lack of trained, qualified and/or well-informed energy efficiency contractors, Virginia provided a variety of workforce training and development opportunities for them. Advanced Energy provided technical trainings to building contractors in each program based on their particular needs. The training curriculum verbally and graphically instructed the contractors how to correctly install energy efficiency measures in the homes. The curriculum was developed by Advanced Energy in conjunction with the then newly published DOE Workforce Guidelines.

Earth Advantage Institute (EAI) staff provided trainings to both home energy auditors and contractors working in each of the Virginia programs in the use of the Energy Performance Score platform that rated the energy efficiency of the homes. EAI staff and/or their consultants also provided training for Real Estate Agents and Appraisers on the increased value that energy efficiency upgrades add to a home - with the goal of getting these market actors to include this value added information when they list/appraise their clients’ homes.

In Blacksburg and Roanoke, cafe<sup>2</sup>’s affiliation with Community Housing Partners’ Energy Research and Training Center, an IREC-accredited (Interstate Renewable Energy Council) weatherization training facility, proved extremely valuable by offering BPI certifications to participating contractors. CHP was able to leverage a U.S. Department of Labor Green Jobs Training Grant, and along with the SEP grant award funds, cafe<sup>2</sup> was able to provide free (to the contractor) BPI training and Retrofit Installer

Technician training to each of the participating contractors in the program. Through these trainings, cafe<sup>2</sup> was able to support the startup of one contractor and helped to sustain another existing contractor by ensuring the contractors had the skills and knowledge that they needed to be successful.

In Charlottesville, LEAP found that there was not a well-established home performance industry when they first began operations in 2009. At the time, there were only two home auditors in the area and no vertically integrated contractors that could assist homeowners from the beginning to the end of their home retrofit projects. LEAP conducted extensive outreach to HVAC and insulation contractors encouraging them to consider adding home performance to their suite of services. LEAP also engaged the local community college in Charlottesville – Piedmont Virginia Community College – to help create a construction academy that helped to build EE skills of the local workforce. Because of these efforts, Charlottesville and the surrounding areas in central Virginia now have five auditors and twenty-two companies that offer home performance products and services.

In Arlington County and northern Virginia, LEAP found that there were already several well established BPI-accredited companies operating in the area. LEAP realized that the contractor workforce in northern Virginia was quite different than the workforce in Charlottesville. Because the contractor base in northern Virginia was already mature, LEAP had less opportunity to shape the workforce and found that contractors were not as receptive to changing their business models to fit the Multi-State Program requirements. While contractors in northern Virginia derived value from participating in LEAP's program, they generally did not need program support activities in order to be successful in selling their services.

In Richmond, RREA found that the contractor base focused on implementing single measures; whole house energy performance was not something where many contractors had expertise. RREA discovered that contractors benefited not only from technical trainings on air sealing and HVAC installation, but they also benefited from sales training to help them sell products and services to homeowners.

## **Financing and incentives**

The cafe<sup>2</sup> program experimented with several audit and retrofit incentives throughout the project period. Initially the program offered a \$500 rebate for an audit and a \$1,375 rebate for retrofit work for clients that earned a 20% savings and spent more than \$3,500 on their project. This incentive structure proved to be too confusing for clients so the incentive structure was modified so that clients earned a larger rebate for spending more on their project, capped at \$3,000 for any retrofit over \$10,000. This revised structure worked better, but quickly became unsustainable as many clients opted for large retrofits. In September 2012, a flat 20% rebate on retrofits and a half-priced audit of \$250 was created and this incentive package proved to be the most effective to encourage homeowners proceed with a retrofit, while not exhausting the budget too quickly.

cafe<sup>2</sup> was able to offer a variety of financing options to homeowners, but making them attractive to homeowners proved very difficult. cafe<sup>2</sup> initially partnered with Freedom First Federal Credit Union to provide loan products specifically for energy upgrades that would feature favorable or extended payback terms and loans to those with less-than-ideal credit. DMME provided the capital for this Loan Loss Reserve Fund (LLRF) for this product with Freedom First. Despite efforts from cafe<sup>2</sup> staff, the credit

union declined to offer lower interest rates or develop marketing materials to promote the product. Because of this, the loan product was not successful and did not provide any loans for energy efficiency upgrades through the program. DMME withdrew the LLRF capital and issued a new request for proposals to establish a new LLRF.

cafe<sup>2</sup> partnered with the Federation of Appalachian Housing Enterprises (FAHE) who responded to and won the RFP to establish a new loan program. FAHE is now offering low-interest secured and unsecured PowerSaver loans in the cafe<sup>2</sup> service area. cafe<sup>2</sup> also served as an intermediary for the Federal Home Loan Bank energy efficient set-aside program. This enabled cafe<sup>2</sup> staff to facilitate retrofits for low-income clients. While this relationship was helpful to serving low-income clients and generating business for contractors, the time and resources required to serve as an intermediary proved to be burdensome upon the program.

cafe<sup>2</sup> also attempted to establish an On-Bill Financing (OBF) Program through the Virginia Tech Electric Utility in Blacksburg. While regulated investor-owned utilities (IOUs) in Virginia are not allowed to offer OBF, it seemed promising that the Virginia Tech Electric Utility could offer this program as a municipal utility. Unfortunately, Virginia Tech administrators determined that implementing an OBF Program would be a violation of their contract with Appalachian Electric Power (APCo), who supplies the vast majority of electricity distributed by the Virginia Tech Electric Utility.

LEAP also had to fine tune their incentive offerings over the life of the project. Rebates ranged from 20% of a project cost up to \$500 to a maximum of \$1000. LEAP also changed incentive offerings to coincide with special events. For instance, at the end of the program, LEAP launched its 90 Days of Summer special to leverage remaining incentive dollars, fill the project pipeline for the post grant period, and set the conditions for the launch of LEAP's revised Home Performance with ENERGY STAR program. LEAP offered a PowerSaver Loan through the UVA Community Credit Union in Charlottesville and traditional loan products through the Arlington Community Federal Credit Union in Arlington County. LEAP found that financing proved more popular in Charlottesville, whereas the northern Virginia residents were typically not interested in financing options.

In Richmond, RREA discovered that incentivizing the initial energy assessment was critical to driving demand as many homeowners are unwilling to spend \$300 to \$400 on an energy assessment. RREA began their program offering a \$1,000 rebate for retrofits only, but found that it was difficult to get clients to get an audit in order to qualify for the retrofit rebate. In April 2012, RREA revised their incentive structure to include a \$250 rebate for energy audits and a \$500 rebate for retrofits. RREA also found that having a loan program through AFC First was very important to not only provide capital to homeowners, but it also served to give RREA contractors a competitive advantage over other non-RREA contractors.

## **Data and Evaluation**

Data collection and reporting were key components to tracking and assessing program performance towards target goals, but they also proved to be very challenging and time consuming for the programs and their partners. Several issues that programs encountered included: contractor objection to

collecting and regularly reporting data; lack of sophisticated systems to track, analyze, and transfer project data; and the large amount of time and resources needed to collect, process, and format data to be used for analysis.

One solution that is being embraced by LEAP is the use of HPXML (Home Performance XML) compliant software to mitigate the data collection and reporting issues. LEAP is part of an industry collaborative which includes NYSERDA and APS in Arizona to identify a minimum data standard for whole house retrofits using HPXML for the schema and transfer of information. Contractors can choose from multiple modeling tools, which allows them to use what works for their sales and business model and seamlessly uploads that data into the program software.

Programs were also asked to collect utility bill data to verify estimated savings. All programs in Virginia chose to obtain waivers from homeowners and then work directly with their utilities to collect the necessary data in electronic file formats. LEAP found that despite their best efforts to streamline the process, by only asking for utility data on a quarterly basis, the data release from the utility took a long time to secure. <sup>2</sup> and RREA found that some utilities in their areas refused to provide the information despite the programs having waivers from the homeowners. In some instances, the utilities lacked the technology infrastructure or staff capabilities to comply with these large data requests.

The Cadmus Group was contracted by NASEO to provide an independent third party process evaluation for the Virginia programs. As part of this evaluation, Cadmus surveyed homeowners, contractors, and other market actors to assess the effectiveness of each of the programs. The Southeast Energy Efficiency Alliance (SEEA) also hired another separate team from Cadmus to perform a process and impact evaluation of the EECBG funded Better Buildings Neighborhood Program sub-grantees. This second evaluation also included LEAP since they received both EECBG and SEP program funding. The U.S. Department of Energy also undertook a national impact and process evaluation performed by a group of private evaluation contractors.

These various evaluations, while operating separately, at times overlapped and caused a huge burden to be placed upon the programs to provide information. While the programs were aware that the evaluations would be taking place, it was discovered that the data that the various evaluation teams needed as inputs did not necessarily correlate with the data that programs were collecting from homeowners and contractors. SEEA, DMME, NASEO and Cadmus worked to coordinate efforts where possible, but the programs expressed their frustration at having to dedicate a large amount of resources towards collecting data for the evaluations that could have been used towards running their programs. One solution for future evaluations would be to identify data inputs at the beginning of the program and ensure programs have the means to collect and report that information. Also, it would be valuable for various program partners to combine evaluation efforts to avoid duplication.

## Accomplishments

Listed below are the original Statement of Project Objectives (SOPO), which includes a detailed description of objectives with targeted activities and actual accomplishments.

### PHASE 1: Program Strategy/Plan

#### **1. SOPO Task 1.0: Create a development strategy for the Virginia REAs to deliver a residential whole-house energy efficiency program.**

- **Target:** Effective program elements will be transplanted from established markets to emerging markets within Virginia and across a multi-state area. Development strategy to include marketing, financing, Quality Assurance (QA) protocols for work performed, and Measurement and Verification (M&V).
- **Actual:** Each program developed their own methods for marketing, financing, QA, and M&V, but the most established and sustainable model was the LEAP program in Charlottesville and northern Virginia. This model will be adopted by the programs operating in Blacksburg, Roanoke and Richmond after the Multi-State Project is complete.

#### **SOPO Subtask 1.1**

- **Target:** Establish a communications protocol for frequency and method for sharing information between program participants.
- **Actual:** The Southeast Energy Efficiency Alliance (SEEA) staff served in a project management role for the project and coordinated regular communications including bi-weekly program group calls, regular e-mail communications on deadlines and guidance updates and site visits.

NASEO staff coordinated steering committee calls and meetings among the four Multi-State Project states and other project partners.

#### **SOPO Subtask 1.2**

- **Target:** Contract for a suite of online tools to be used by program implementers to manage customers, engage homeowners, facilitate the conversion process from intake to audit to retrofit, and M&V on the process.
- **Actual:** Earth Advantage Institute was contracted to provide the Energy Performance Score (EPS) tool to program administrators, energy auditors, and contractors to use

during the audit and post-retrofit stage of a project to generate an energy score and potential savings.

- Energy Savvy was contracted to develop an online home owner engagement tool for each of the REA programs. Homeowners used this tool to enter information about their home to receive an energy use ranking, recommended upgrades and estimated savings.

### **SOPO Subtask 1.3**

- **Target:** Identify workforce training issues and contract for the training of auditors and the development of retrofit contractor businesses.
- **Actual:** Earth Advantage Institute provided auditor and contractor trainings on the Energy Performance Score platform.

Advanced Energy was contracted by SEEA to provide contractor trainings to the local programs based on the needs of the contractors in each area.

Community Housing Partners also contributed by providing free BPI certifications to contractors in Blacksburg and Roanoke.

### **SOPO Subtask 1.4**

- **Target:** Create a plan for the implementation of the Energy Performance Score (EPS) metric to be adopted and promoted by the REAs in all areas. Public outreach around the EPS will include training of Realtors and Appraisers to establish the mechanisms for valuing energy efficiency within the real estate community.
- **Actual:** Earth Advantage Institute (EAI) developed an implementation plan for each of the program communities which involved onboarding programs and contractors on how to use the EPS platform along with targeted trainings for realtors and appraisers that demonstrated the value of the EPS score and how to market energy efficient homes.

## **2. SOPO Objective 4: Establish a statewide financing program to fund residential retrofit projects.**

- **Target:** Issue an RFP to establish Loan Loss Reserve Funds (LLRFs) to assist homeowners finance their comprehensive whole house retrofit projects.
- **Actual:** DMME established financing instruments for each of the three REAs utilizing funds from their Energy Efficiency and Conservation Block Grant Program. In each case, DMME established a Loan-Loss Reserve Fund (LLRF) to encourage lenders to offer a targeted energy efficiency loan

product. In Richmond, DMME partnered with AFC First based in Pennsylvania. Due to other funding LEAP received for its Charlottesville operations, DMME only established a financing instrument for LEAP in Arlington County in northern Virginia where they partnered with the Arlington Community Federal Credit Union.

For cafe<sup>2</sup>, DMME contracted with Freedom First Federal Credit Union, based in Roanoke, to establish a LLRF product. Because this loan product was not actively marketed by the credit union, no loans were closed for energy efficiency upgrades through the program and therefore, DMME closed this LLRF and issued a new request for proposals for the re-use of these funds for a new LLRF. The Federation of Appalachian Housing Enterprises (FAHE), based in Berea, Kentucky, was awarded the contract for the reallocated LLRF money. FAHE has outlined plans for a robust marketing effort in order to promote their loan products to homeowners in their southwest Virginia service area that overlaps with cafe<sup>2</sup>'s service area.

### 3. SOPO Task 3.0: Establish an Evaluation, Monitoring and Verification (EM&V) protocol

- **Target:** Develop an EM&V protocol in coordination with our partners at a level and standard that is similar to the industry-accepted practices identified in the National Action Plan for Energy Efficiency and DOE metrics outlined in their Better Buildings Program.
- **Actual:** Through its contractual arrangement with NASEO, the four states jointly contracted with The Cadmus Group to perform an independent third party process evaluation of the project. The final evaluation report, *Multi-State Residential Retrofit Process Evaluation: Virginia*, is attached to this report.

Monitoring and verification that the energy measures that were installed correctly was insured by the Quality Assurance Procedures and Protocols that the project partner Advanced Energy developed tailored for each of the 3 Virginia REA programs.

Measurement of fuel savings was calculated on a case-by-case basis with the very detailed data entered into the BBNIS as required by the Better Buildings Program. This data calculated the amount of fuel savings by fuel source as well as the current cost savings by fuel type for the homeowners.

### 4. SOPO Task 4.0: Identify supportive policy and legislation

- **Target:** Identify policy drivers and recommended legislation to support large scale adoption of retrofit remodeling.

- **Actual:** Through SEEA, DMME contracted with Environment Northeast to conduct a policy analysis and make recommendations to advance residential energy efficiency in Virginia. This report (included as an attachment) was delivered to the DMME as well as the program implementing REAs and will be used to promote legislative and programmatic changes to better incorporate energy efficiency into the Virginia energy mix.

During the Multi-State Project, the REAs have collaborated to organize the Virginia Energy Efficiency Council, an umbrella group dedicated to supporting and expanding the energy efficiency industry in the Commonwealth. The Council now has a widening range of members from both the private and public sectors with the mission to elevate the awareness and value of energy efficiency in the energy marketplace. See the Council's website at: [www.vaeec.org](http://www.vaeec.org).

**5. SOPO Task 5.0: Implement a Financial Incentive Program that will be used by the REAs that will help homeowners and their contractors undertake residential retrofit projects that meet the 20% energy savings benchmark.**

- **Target:** Each of the REAs will develop a Financial Incentive Plan to be submitted to the State Energy Office (DMME) for approval before incentive funds are distributed to the REAs. The amount budgeted in the Financial Incentives line item is anticipated to be distributed equally between the 4 REA programs participating in this project.
- **Actual:** Each REA developed a financial incentive plan that was submitted and approved by both SEEA and DMME Project Managers. Each program started out with roughly the same amount of funds for homeowner rebates and contractor incentives. Throughout the project period, the programs modified their incentive structures to fit the demand and scale of projects being performed. Towards the end of the project, LEAP requested that a significant amount of their incentive dollars originally budgeted for their Charlottesville service area be reallocated to their Arlington County service area in northern Virginia where they would have a greater impact.

**PHASE 2: IMPLEMENTATION AND EVALUATION**

**1. SOPO Task 1.0: Building off the work completed in Phase 1, Phase 2 will begin to implement the residential retrofit programs.**

- **Target:** Installation of programmatic software and launch of a customer web portal will accompany the programs' implementation.
- **Actual:** After the additional infusion of \$90,000 in DMME supplemental funds to support the homeowner engagement and after getting under contract with SEEA, EnergySavvy worked with each Virginia program to customize their online customer engagement tool to be a key

component of each program's website. The tool allowed homeowners to enter a simple set of basic information about their homes, which gave them an assessment of their energy use and retrofit measures that they could take to lower their energy consumption. Since the homeowners were undertaking their home assessment on the REA website, they were where they needed to be to utilize the "1-stop shopping" resources of the REA hosting the EnergySavvy assessment tool to move forward with their home retrofit project.

### **SOPD Subtask 1.1**

- **Target:** Curriculum for the contractor development package finalized and integrated into the training protocols for each state's target areas. New curriculum will be integrated into established curriculum for local training. New curriculum will also address critical needs in workforce viability and expansion, as somewhat distinct from workforce development. The focus will be on helping grow existing home performance contracting businesses, i.e., transitioning remodelers, HVAC or insulation contracting firms into home performance firms, as opposed to creating wholly new businesses.
- **Actual:** Advanced Energy developed and delivered both established and new curriculum to retrofit contractors working for each of the programs. New curriculum material followed the newly published DOE's Standard Work Specifications for Home Energy Professionals that were released in draft form in 2011 and refined since then.

Advanced Energy scheduled and implemented the training to meet the needs of the contractors in each program area and included HVAC installation, air sealing as well as what turned out to be very important contractor sales training in order to help them "close the deal" with the homeowners.

The REA programs administrators did focus on recruiting existing HVAC, insulation, and general contractors to participate in their programs and therefore, participate in these training sessions. The Advanced Energy training sessions were best received and appreciated by those with limited experience in the energy efficiency industry. As you would expect, contractors with more training in installing energy efficiency measures found the Advanced Energy training sessions to have limited use, but the contractors did point out that the sessions were professionally conducted.

### **SOPD Subtask 1.2**

- **Target:** Implement contractor training. For the technical training, the recipient will work with existing training centers and the VA Weatherization Training Program delivered via the community college system to coordinate programs. Trainings developed and deployed will be consistent with national standards and implement national certification trainings where applicable.

- **Actual:** LEAP partnered with Piedmont Virginia Community College in Charlottesville and cafe<sup>2</sup> utilized Community Housing Partners' existing weatherization training center in Christiansburg to deliver contractor trainings in their communities.

Training for the RREA and LEAP-NOVA contractors was conducted by project partners Advanced Energy and Earth Advantage.

#### **SOPO Subtask 1.3:**

- **Target:** Implement auditor training. At least two training sessions per year will be offered for each program. Within the first year of implementation, local entities will be trained to deliver ongoing EPS auditor training.
- **Actual:** EAI provided auditor trainings to each program to educate building auditors on how to input information into the EPS platform to generate an energy score. Auditor trainings were conducted by both REA program staff and EAI staff at the beginning and throughout the course of the project as needed as new contractors entered the program.

#### **SOPO Subtask 1.4:**

- **Target:** The REAs will offer the highly successful S.T.A.R. (Sustainability Training for Accredited Real Estate professionals) to Realtors in the targeted communities. The S.T.A.R. course educates real estate professionals about the features and benefits of new and existing high performance homes. Participants are taught the tools needed to communicate the advantages of energy efficiency, the EPS and green features to their clients. The REAs also plan to deliver Appraising Green Homes: Construction Methods and Valuation Techniques course that is designed to develop residential appraisers' knowledge of EPS and high performance buildings, provide the most recent cost and value data available, and enable participants to complete an informed appraisal of a green home.
- **Actual:** EAI delivered 8 Broker Courses for a total of 96 Real Estate Professionals in Virginia. EAI delivered 8 Appraising a Green Home and Certified Green Home Appraiser Trainings to 119 Appraisers in Virginia.

#### **SOPO Subtask 1.4:**

- **Target:** Launch marketing and outreach campaign will include, but is not limited to, public and private area schools, faith-based organizations, non-profits, government staff, utilities, universities, real estate associations, Chambers of Commerce, and trade organizations. The

recipient will also actively work with regional and local lenders to support the program implementers in promoting the inclusion of the energy retrofit in remodel work done at the point of sale or during a refinance for home improvement (important for the success of the EPS).

- **Actual:** The REAs partnered with many organizations within their communities including academic institutions, local governments, faith-based institutions, utilities, real estate professionals, trade organizations and local neighborhood and business associations. REAs also partnered with lending institutions to provide financing products to clients. Lending partnerships included: Freedom First Federal Credit Union, the Federation of Appalachian Housing Enterprises, Federal Home Loan Bank, UVA Community Credit Union and Arlington Community Federal Credit Union.

## 2. SOPO Task 2.0: Quarterly evaluations.

- **Target:** Perform quarterly evaluations of programs in terms of metrics described above.
- **Actual:** Program partners – the REAs, NASEO and EAI - submitted monthly and quarterly qualitative and quantitative reports to SEEA. SEEA compiled the information into the DOE required quarterly report formats. These reports were then submitted to DMME in order for them to add review and to incorporate additional verbal and financial information. DMME submitted the reports thru the BBNIS. When requested by the BBNIS Data Managers, DMME staff promptly provided additional information or clarifications to the submitted reports.

### SOPO Subtask 2.1

- **Target:** Establish a standardized EM&V plan with common metrics.
- **Actual:** The Cadmus Group developed an EM&V methodology and plan to address their independent process evaluation of the Virginia programs. The evaluation elements evolved overtime as the programs become operational but included an overall program theory, logic model, and researchable issues. SEEA and DMME worked with the programs to collect quantitative information on a monthly and quarterly basis. In addition to this information being submitted to DOE for analysis SEEA also published quarterly Snapshot Reports that detailed program performances compared to goals and energy savings impacts.

## **SOPO Subtask 2.2**

- **Target:** Identify existing contractors to perform EM&V for the Commonwealth of Virginia.
- **Actual:** The Cadmus Group was selected by NASEO to perform a process evaluation for all four project states. The Cadmus Group has offices across the United States including Virginia.

## **SOPO Subtask 2.3**

- **Target:** Begin EM&V Activities. Communicate metrics and procedures to contractors; ensure measurement protocols are implemented beginning with initial retrofit activities.
- **Actual:** The Cadmus Group began the process evaluation of the Multi-State Retrofit Project in September 2011. The overall process and findings can be found in the report *Multi-State Residential Retrofit Process Evaluation: Virginia*, which is attached to this report.

# Challenges

## Start-up Delays

As mentioned earlier, many of the partners involved in this project were in a “start-up” mode themselves when the Multi-State Project was awarded the funds in September 2010. When DOE awarded DMME the grant funds in September 2010, LEAP was up and running a program in the Charlottesville area. In mid-2011, the RREA and cafe<sup>2</sup> were incorporated as non-profit organizations to implement the Multi-State Project in their respective service areas.

Also during mid-2011, it was determined that the REA in the Tidewater region of Virginia did not have the capacity to undertake this project. At that point in time, DOE officials asked the DMME to consider serving the Northern Virginia region instead of the Tidewater region since there was an existing contractor base already operating a “sponsor-less” HPwES Program. Fortunately, LEAP was able to expand their operation into Northern Virginia to work with these contractors that could benefit from LEAP’s comprehensive residential retrofit program services.

SEEA provided Project Management services for the REAs and the staff turnover/staff capacity at SEEA caused serious concerns with the consistency of services and most importantly hampered the timely reimbursements to the REAs, which resulted in cash flow issues for the REAs.

Since there were many different organizations and vendors involved with the Project, communications were complicated, time consuming and required a lot of coordination with partners working in 3 different time zones.

## Contractors

Working with contractors proved to be a challenging task for the REA staff during the project and was notable in the following ways:

- The REAs had to structure their procedure/policies for the contractors in order to meet the requirements of the grant, which often caused conflicts with how they normally conducted business, which resulted in slower than hoped for progress with the program.
- More specifically, the REAs received a great deal of opposition from contractors who were reluctant to modify their business model and commit to the amount of paperwork and data collection required for grant compliance purposes.
- The cafe<sup>2</sup> program found that establishing clear rules and policies with contractors in a written format such as a Memorandum of Understanding (MOU) helps particularly with regards to disputes concerning invoicing, deadlines, client communication, and data collection.
- LEAP also found that requiring monthly contractor meetings helped to facilitate communication and foster relationships between the program staff and contractors. These meetings allowed for

trust to be built between program staff and contractors and provided an opportunity to discuss any outstanding issues.

- Another point of contention between contractors and program implementers was the required use of the Energy Performance Score (EPS) energy assessment software. When initially delivered, the EPS tool was calibrated for a different climate region and did not take into account the climate of the programs in Virginia. Because of this, many contractors felt that the scores it generated were inaccurate. This was a problem for both contractors and clients as the rebate system for completed jobs was dependent on demonstrating energy savings projected by the EPS tool. In several instances, contractors recommended certain measures that they normally would not have otherwise in order to achieve the required level of savings in order to receive the rebate. Also, several clients opted out of any retrofit work because they did not qualify for a rebate on a larger scale job.
- The issues surrounding the accuracy of EPS tool improved following phone calls between REA program administrators/auditors and Earth Advantage Institute staff, the vendor of the EPS software, after they made the necessary adjustments to the tool.

### **Client and Project Management**

Several REA programs experienced challenges with managing client information throughout the project process. cafe<sup>2</sup> staff noted that taking the time in the beginning of the program to develop a client and data management system would have helped to increase operational efficiency. LEAP staff also expressed the importance of having a comprehensive system to capture client and project level information to effectively run a program - particularly when staff time and resources are limited.

### **Marketing**

With limited financial resources and staff, determining the appropriate marketing channels proved to be a trial and error exercise for many of the REA programs. Because the programs had to ramp up quickly and immediately begin to recruit clients they tried many methods of marketing to find out what was most effective.

RREA noted that their marketing strategy evolved over time. They discovered that print and web-based ads were less effective than securing a local TV spotlight on the program or grassroots outreach through neighborhood meetings, the realtor community or faith-based meetings.

cafe<sup>2</sup> tried several conventional marketing methods such as billboard ads, direct mail campaigns, radio ads and bus ads. While they considered these marketing methods to be mildly effective, they noted that the marketing resources may have been better invested in a Home Makeover Competition or contracting for marketing services to perform additional community-based marketing initiatives.

## **Partnerships and Collaborations**

Partnerships within the community were found to be essential to program success. However, establishing and fostering relationships take a great deal of time and energy. Many programs found that they had to dedicate a significant amount of time and resources to meeting with community groups, businesses, and organizations in order to illustrate the value of energy efficiency retrofit programs. Once established, these partnerships eventually led to programs generating more leads and converting more audits to retrofits. Several REA programs expressed that they believed they would have been able to achieve more programmatic goals if they had more time to establish community partnerships.

This was particularly true in the case of collaboration with local utilities. The project itself recognized that the Commonwealth lacked a strong history of utility sponsored energy efficiency programs, so it was not surprising that the REAs struggled to engage the utilities in this effort. This was further complicated by the program requirement to collect and submit utility data, an activity few utilities in this region have ever undertaken, and one which may have placed additional stress on these nascent relationships.

## **Market Knowledge and Demand**

The purpose and benefits of energy efficiency retrofit programs were not well understood by the general public. Programs experienced barriers to selling whole home energy efficiency retrofits that included clients' lack of knowledge of building science, the high cost of whole-home retrofits, distrust of contractors, and lack in confidence in the return on investment after undertaking energy efficiency work. LEAP found that in order to achieve the program requirement of 20% gain in energy efficiency, single-measure retrofits generally were insufficient and the 20% level of savings could generally only be achieved with a \$6,000-\$10,000 project. Even with generous rebates and financing mechanisms, many homeowners were reluctant to commit to that level of investment. LEAP found that the best method for reducing these barriers was to coach and educate homeowners throughout the entire assessment and retrofit process.

RREA also found that they could increase demand for energy assessments, which were required in order to qualify for the \$500 retrofit rebate, by decreasing their cost. However, this did not correlate to a higher audit to retrofit conversion rate. Although labor intensive, RREA noted that having an energy coach or program representative available to walk homeowners through the process would have helped to convert more audits into retrofit projects.

## **Program Goals and Requirements**

The target of 1,350 completed retrofits during the 3-year project period proved to be a challenging target to reach since the REAs were new or still in the early stages of development when they had to ramp up program operations rapidly. In addition, the programs had to address barriers including lack of infrastructure and qualified contractors before they could move forward in addressing the retrofit goal.

Starting new energy efficiency programs in areas where programs have not existed before requires a great deal of time and commitment. If similar projects are developed in the future, the goals and timeline should align with the starting conditions of the program implementers and the work that needs to be accomplished in order to achieve the goals.

## Program Sustainability Plans

After September 2013, the three REAs will work together to develop a statewide network to implement residential energy efficiency in Virginia, adopting the LEAP program model on a program-wide basis.

After September 2013, the cafe<sup>2</sup> brand will be discontinued, but will continue to operate under the Virginia Home Performance with Energy Star (HPwES) Program in partnership with LEAP and RREA. Their market area of Blacksburg and Roanoke will stay the same, but the nature of the business model will be much different. The new model going forward will be contractor focused with the new alliance of LEAP, RREA and the new cafe<sup>2</sup> program providing Home Performance with ENERGY STAR branding, contractor certifications and quality assurance.

The alliance will earn revenue by charging for in-home consultations and collecting contractor and lending referral fees. The alliance will look to funding from local governments and private foundations to sustain operations and also hopes to secure a contract to deliver demand side management services on behalf of larger utilities in the western portion of Virginia. The new cafe<sup>2</sup> program staff will work with the communications staff at Community Housing Partners to issue a press release in September that will outline the changes to the program name and service model. The announcement will serve as an opportunity to advertise the success of the cafe<sup>2</sup> program and also serve as the official statement launching the HPwES brand in Southwest Virginia.

LEAP will maintain its identity as the Local Energy Alliance Program and intends to partner with the RREA and CAFE<sup>2</sup> as the first step forwards eventually forming a state-wide entity. LEAP will focus their efforts on the residential and small commercial sectors continuing to offer low-cost initial entry steps for building owners to make their properties more efficient. A number of grants have already been secured to sustain operations through 2014 from the City of Charlottesville, the Virginia Department of Mines, Minerals, and Energy, and the State Energy Program. Other future revenue streams will include fees from Home Energy Check-Ups, fees from contractors for leads, HPwES certificate and yard sign fees, and providing additional services as needed by contractors and clients. LEAP will maintain its existing partnerships with the City of Charlottesville, the UVA Community Credit Union, and local utilities, but will also look at creating new partnerships in other areas. LEAP is currently looking at expanding operations to other communities in Northern Virginia including the City of Alexandria, Reston, and Fairfax.

The RREA will retain its name, but will adopt the LEAP business model. RREA will be removing the requirement for an energy assessment and will instead offer an optional \$99 healthy and efficient home evaluation. The goal of this revised program is to generate leads for contractors for any type and level of home energy efficiency work and earn revenue while generating those leads. RREA also plans to research the feasibility of implementing an on-bill financing program and an energy efficiency project in the multifamily building sector.

## Verification of Data

- DMME and its project partners have reviewed and verified the summary information of data submitted to the BBNIS to be used for third-part evaluations.
- The Cadmus Group completed a third-party process evaluation of the Virginia Program. The report *Multi-State Residential Retrofit Process Evaluation: Virginia* prepared by The Cadmus Group is attached to this report.

## Developed Products

The Cadmus Group report *Multi-State Residential Retrofit Process Evaluation: Virginia*  
Environment Northeast Policy Reports

Virginia Department of Mines, Minerals and Energy website: [www.dmme.virginia.gov](http://www.dmme.virginia.gov)

LEAP Charlottesville Home Performance with ENERGY STAR yard sign

LEAP HPXML (home performance XML) field definition and API protocol

The SEEA Energy Pro<sup>3</sup> Report: To be released in October 2013

SEEA Snapshot Reports: Released quarterly and found on SEEA's website: [www.seealliance.org](http://www.seealliance.org).

SEEA Salesforce Database

## Addendum

The original Virginia performance period ran from October 2010 until September 2013. While the REA activities under the grant ended September 29, 2013, DMME received a performance period extension from DOE through the end of May 2014. This extension was used to make final changes to existing DMME SEP revolving loan funds to allow remaining Multi-State Project funds to be used for retrofit project loans beyond the grant period. A total of \$122,455.06 remaining from the original grant award was forwarded to AFC First Financial Corporation to supplement the implementation of their "Virginia Energy Efficiency Loan Program" project.

## Appendix

### List of Program Accomplishments

#### cafe<sup>2</sup> Accomplishments

- Provided a platform to launch one new contractor business that is now thriving (Better Building Works in Roanoke, VA) and generated enough business to keep one contractor alive throughout the grant term.
- Trained 17 individuals at the CHP Energy Research and Training Center with BPI or IREC courses.
- Developed an all-inclusive residential energy efficiency service package for local residents and a first-of-its-kind energy contractor network/trade group in the region.
- Created successful relationships with the Town of Blacksburg and City of Roanoke to effectively become their quasi-governmental department of residential energy efficiency.
- Obtained media coverage from two local newspapers and two local TV stations on multiple occasions.
- Partnered with Virginia Tech students to develop two research projects on the effectiveness and accuracy of energy modeling tools and the cost-effectiveness of retrofits on different types of homes.
- Developed a system with the Appalachian Electric Power, Virginia Tech Electric, Roanoke Gas, and Atmos Gas utility companies to obtain utility data.
- Created a partnership with Federation of Appalachian Housing Enterprises, Inc. (FAHE, Inc.), a community development financial institution, to deliver low-interest financing to clients through the PowerSaver Loan Program. This financial instrument will continue into the post-grant period.
- Helped over 20 low-income clients perform retrofits on their home through the Federal Home Loan Bank Program.
- Partnered with Hollins University to conduct an audit and retrofit project on an on-campus residence. Several media outlets picked up the story and we obtained several strong leads from this effort.
- Conducted two volunteer projects for low-income or disadvantaged clients. One client received a new roof and an exterior makeover with funds from the Wells Fargo Foundation, and two others received home modification grants through the Home Depot Foundation.
- Developed a successful neighbor-to-neighbor marketing strategy and other successful community-based marketing efforts, including standing invitations to present at neighborhood association meetings and civic clubs and represent the organization at expos, home shows, and street festivals.
- Secured \$72,500 and \$86,000 in CDBG grant funding from the City of Roanoke to perform retrofits for disadvantaged clients.
- Secured a \$135,000 EECBG grant from the Town of Blacksburg to deliver 50 audits and retrofits. Ultimately conducted over 60 audits and 53 retrofits with this funding.

- Developed a partnership with LEAP and RREA, with DMME assistance, to create a "statewide" energy alliance and bring the Home Performance with Energy Star Certification Program to Southwest Virginia for the first time.

### **LEAP Charlottesville and NOVA Accomplishments**

- Over the course of the last three years, over 1,200 Central Virginia homeowners have participated in LEAP's Central Virginia Residential Program using EECBG and SEP competitive funds..
- Over the course of the past two years, over 800 Arlington County homeowners have participated in LEAP's program with over 80 doing comprehensive retrofit work sufficient to earn an HPwES certificate.
- Expanded the home performance contractor base in northern Virginia.
- Along with routine training that occurred as part of every test-out and QA inspection, LEAP was also able to bring some of the top names in the industry to Central Virginia for seminars with our contractors. Advanced Energy, Earth Advantage, OmStout Consulting and others have provided a steady stream of dynamic training events to help raise the bar for LEAP's contractor network.
- Created HPwES yard-signs that are given to customers who reach 20% in energy savings.
- Participated in a highly successful direct mail campaign that sent a \$250 audit rebate from LEAP with Arlington County promotion to over 250 Arlington County residents. This outreach method seemed particularly effective because it came directly from the County and included a letter of support from County staff.
- LEAP's partnership with the UVA Credit Union to offer PowerSaver Loans has been very successful and increased market uptake in the community.
- LEAP's relationship with the City of Charlottesville has proved invaluable since the program's inception. Charlottesville's City Council has supported LEAP in many ways including funding stand-alone efforts such as the Energize250! campaign whereby the city subsidized Home Energy Reviews for 250 city residents as well as a low-income "block-by-block" program.
- The Charlottesville Albemarle Association of REALTORS (CAAR) has been another key ally for LEAP. Through LEAP's extensive work with CAAR, Charlottesville was one of the first cities to have a "green" MLS with a check-box for HPwES.
- Other key partners for LEAP included the University of Virginia, the UVA Community Credit Union, local retailers, other area nonprofits and the local utilities Dominion Virginia Power and Charlottesville Gas.
- LEAP was instrumental in piloting and developing the new HPXML protocol in conjunction with the National Home Performance Council and BPI.
- LEAP discovered that the traditional audit-to-whole house retrofit process was too daunting for most consumers. Therefore, they developed and fielded a lower-cost and less intense Home Energy Review along with a corresponding "Staged Retrofit" process as part of a program sustainability strategy post grant.

## Richmond Accomplishments

- Built a delivery platform that enables homeowners to engage and access home energy performance contractors, financing, and incentives. In other words, RREA built a one-stop-shop for the home energy performance upgrade market.
- Recruited a total of seven contractors to participate in their program, three of which were home energy performance contractors; the other four were single measure contractors. These contractors were all trained on how to use our energy auditing software - EPS - provided by the grant.
- Secured the sponsorship for Home Performance with Energy Star in the Richmond Metropolitan Area.
- Introduced a loan program with AFC First, a national energy efficiency lender.
- Set up a third party Quality Assurance Program with Earthcraft Virginia, a green building certification nonprofit organization.
- Successfully launched a home energy makeover contest with over 1,500 contest entries. One winner secured a \$10,000 home energy makeover project.
- Developed a relationship with the local NBC affiliate, which resulted in several news stories about RREA over the life of the grant.
- Worked with both the electric utility (Dominion Virginia Power) and gas utility (Richmond City Gas) energy efficiency rebate programs to cross market each other's programs.
- Formed a partnership with Virginia Interfaith Power and Light to develop a faith-based marketing and outreach program.
- Implemented a Realtor outreach program which educated over 200 Realtors about home energy performance and the RREA Program.
- In partnership with the Earth Advantage Institute, conducted two Realtor and Appraiser trainings about home energy performance, sustainability, and green building to over 150 Realtors and Appraisers.
- RREA was featured in news articles in several regional and local publications that helped to establish RREA as a trusted local resource for home energy efficiency projects.
- Established an e-mail database of over 2,500 homeowners in the Richmond area and launched e-mail marketing campaigns approximately every other month to promote RREA services.
- Held an Earth Day Energy Challenge in 2012, in which 15 companies and over 700 area residents participated for the chance to win a free home energy assessment.
- Offered our contractors sales training to help them “close the deal” in selling their energy retrofit projects to homeowners.
- Conducted a successful co-marketing campaign with the University of Richmond.